Michigan House Energy & Technology Committee
Testimony of Richard A Polich – Energy Options & Solutions
On June 20, 2007

I want to thank Chairman Accavitti for allowing me to address the Michigan House Energy and Technology Committee on the package of energy legislation that includes House Bills 4562, 4583, 4812 and 4750. I am testifying on behalf of myself, a person who has spent almost 30 years in the energy business in Michigan, working both for the utilities, independent suppliers, and as an energy consultant. In light of recent studies of the Michigan Public Service Commission and the Michigan Department of Environmental Quality and the recent filings by Consumers Energy and Detroit Edison that identify the need to add new generation resources to Michigan's generation fleet, the passage of comprehensive energy legislation to address Michigan's energy future is critical and needs to happen now. I applaud the decision to move quickly to conduct hearings on this legislation and to move towards its passage. This package of bills will be part of the solution but not the total solution as I will discuss later.

There is no doubt that Michigan is running dangerously close to its limits on its ability to supply electricity to its citizens and businesses. Utility reserve margins continue to dwindle and peak loads continue to rise. But the businesses as usual solutions of adding new coal fired or nuclear generation are not the best options for Michigan. Michigan needs to adopt an aggressive program to implement energy efficiency, demand side management and to join the other states in the nation in adopting Renewable Portfolio Standards.

ENERGY EFFICIENCY

The MPSC's recent 21st Century Energy Report and the MDEQ's study, "A Study of Economic Impacts from the Implementation of a Renewable Portfolio Standard and an Energy Efficiency Program in Michigan", both point out the need and benefit of energy efficiency programs to reducing Michigan's need for new generation. It is clear from these studies that energy efficiency is the easiest, most cost effective and fastest method of helping to resolve Michigan's pending energy problems. The opportunities for reducing both Michigan's total electric consumption and peak demand are tremendous. Implementation of energy efficiency programs will cost the residents and businesses of Michigan significantly less then the decision to build a new coal or nuclear power plant. Energy efficiency programs will also have an immediate impact on resolving Michigan's energy needs where as building new generation could take upwards of ten years before being on line and able to meet electric needs. Energy efficiency also

reduces Michigan's carbon foot print more effectively then any other single option. The legislature needs to move forward with providing the MPSC the authority to implement energy efficiency programs. This authority needs to include the following attributes:

- Require a program which results in goals of 1% per year combined reduction in electric consumption and peak demand use over the next ten years.
- Authorize the MPSC to implement a surcharge on customer electric bills to fund the energy efficiency program.
- Authorize the MPSC to hire through a competitive bid process, a third-party administrator of the energy efficiency program.
- Require participation in the energy efficiency program of all customers classes, residential, commercial and industrial.

In addition, Michigan needs to move forward with new building codes that implement energy efficiency standards as contained in House Bill 4812 and to adopt appliance standards as presented in House Bill 4750.

RENEWABLE PORTFOLIO STANDARD

In addition to energy efficiency, it is time for Michigan to join the growing number of states to implement Renewable Portfolio Standards (RPS). There have been numerous studies that have shown that the implementation of an RPS is justified from both an environmental and economic perspective. Both the MPSC's recent 21st Century Energy Report and the MDEQ's study, "A Study of Economic Impacts from the Implementation of a Renewable Portfolio Standard and an Energy Efficiency Program in Michigan", both point out that an RPS will have economic benfits for the state. A recent study by the US Department of Energy for Senator Jeff Bingaman, titled, "Impacts of a 15-Percent Renewable Portfolio Standard", concludes that the economic impact of RPS is negligible. I have just completed an analysis comparing the impact on rates of a 500 MW coal power plant to installing 500 MW of new wind generation in Michigan. The analysis concludes that the wind generation costs will be cheaper then the coal power plant for Michigan's electric rate payers. This analysis uses data from Consumers Energy's recently filed Integrated Resource Plan. It includes the following conservative assumptions:

- Uses Consumers Energy's projected coal power plant costs despite there have been recent higher cost projections by other utilities.

- The wind option includes the cost and construction of 500 MW peak generator to backup the wind production.
- Does not include any cost impact for a carbon tax.
- Does not include the impact of lower natural gas prices due to the reduction in natural gas use for electric generation.

I have attached a copy of a presentation explaining this analysis. The conclusion is that it is no longer "too expensive" to implement RPS.

It is also necessary to implement an RPS because without a requirement for renewable generation there is nothing that will require Michigan's utilities to purchase power from renewable projects. Utilities and there shareholders earn their profits/ dividends from return on net capital investment. All other costs and expenses are a pass through, including purchase power costs. In addition, since utility earnings are on ***NET CAPITAL INVESTMENT***, which is initial capital investment minus depreciation, over time utilities earning decline. As an example, in the first year of a new $1 billion power plant incorporation into electric rate base, the utility will earn a return on the full $1 billion of capital invested. In the second year, assuming a 40 year depreciation period, the utility will theoretically only earn on $975 million of that capital investment. After year 40, the utility earns nothing on the initial capital investment. This arrangement provides utilities an incentive to build new generation facilities because it provides earnings growth. Without a law requiring utilities to purchase power from renewable resources, utilities can choose to build nuclear and coal power plants instead of purchasing renewable power.

COMPETITIVE BIDDING

There is one other piece to the solution to Michigan's future energy solution; competition. Competition leads to innovation, as was seen when competition was introduced in the telephone industry. If we leave the only option for the implementation of energy efficiency, RPS and even the building of our next generation of power plants to the utilities, Michigan will not obtain the most cost effective nor best set of solutions top future energy needs. The requirement for utilities to issue Requests for Proposal for energy efficiency, sources of renewable power, and fossil/nuclear power will lead to the lowest costs for Michigan. Without such a requirement, there is very little control on potential cost overruns, similar to what was seen in the last round of power plants built by Michigan utilities. An RFP process can be set up which allows effective

and fair competition of all parties, including the utilities. The advantage of the RFP process is that it provides defined costs for projects and can be designed to cause cost over runs to be at the bidder's risk. This results in defined costs to Michigan's rate payers before the project is even built.

Utilities will complain that under Michigan's current regulatory structure, requiring them to enter into a power purchase agreement as a result of an RFP process is providing competitors access to wealth by using the utilities balance sheet. In reality it is the utility's rate payers who are providing the credit on which the successful bidder constructs the project because it is the rate payers who pay the cost of the power purchase agreement. The utilities will also complain that with customers able to purchase power from competitive sources, the utility will be left with expensive power purchase agreements and no customers to pay the costs. First, as has been seen recently, when electric supplies are tight, utilities will have the lowest cost electricity because of their fleet of legacy power plants. Many of these units are significantly depreciated which lowers their costs in rate base. Many of these units are also fueled by coal or nuclear which have low operating costs compared to natural gas. Second, alternative suppliers only have access to resources available in the market and that will usually be the highest cost resources. In spite of this there is still the risk of utilities having costs for new generation without a source to pay for them. The solution to this dilemma to allow the MPSC to charge customers electing to use an alternative supplier for the new power plant and require the utility to provide equivalent power for their payments. In this way, the utility will never find itself with an inability to pay for the new generation and will also treat the choice customers fairly by providing them power as compensation for their payments.

This concludes my testimony. I will be happy to discuss these topics further with you or anyone on your committee.

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Cost Comparison of Coal Power Plant and Wind Energy

Presented before the Michigan House
Energy and Technology Committee

June 20, 2007

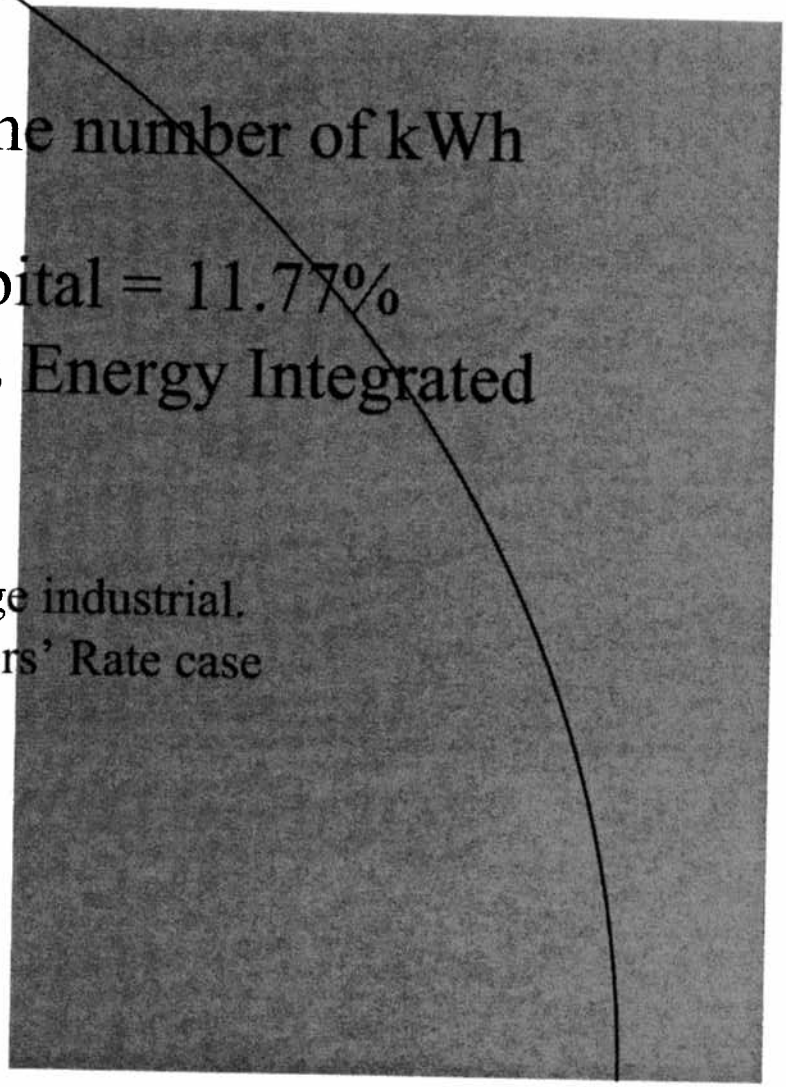
Coal versus Wind Cost Summary

PROJECT DESCRIPTION	COAL OPTION	WIND RPS
Capital Costs/Power Purchase Price		
Main Generation ($/kW incl AFUDC)	$2,956	
Wind generation Market Price ($/MWh)		$82
Backup Source ($/kW incl AFUDC)		$490
20 YEAR AVERAGE ANNUAL CUSTOMER COST COMPARISON		
Revenue Requirement	$160,758	$153,223
Operating Costs	$44,985	$39,481
Fuel Costs	$93,571	$92,446
Total Costs	**$299,315**	**$285,150**
Total Cost per MWh	**$80.40**	**$76.59**

Wind is Cheaper then Coal including building 100% backup power source

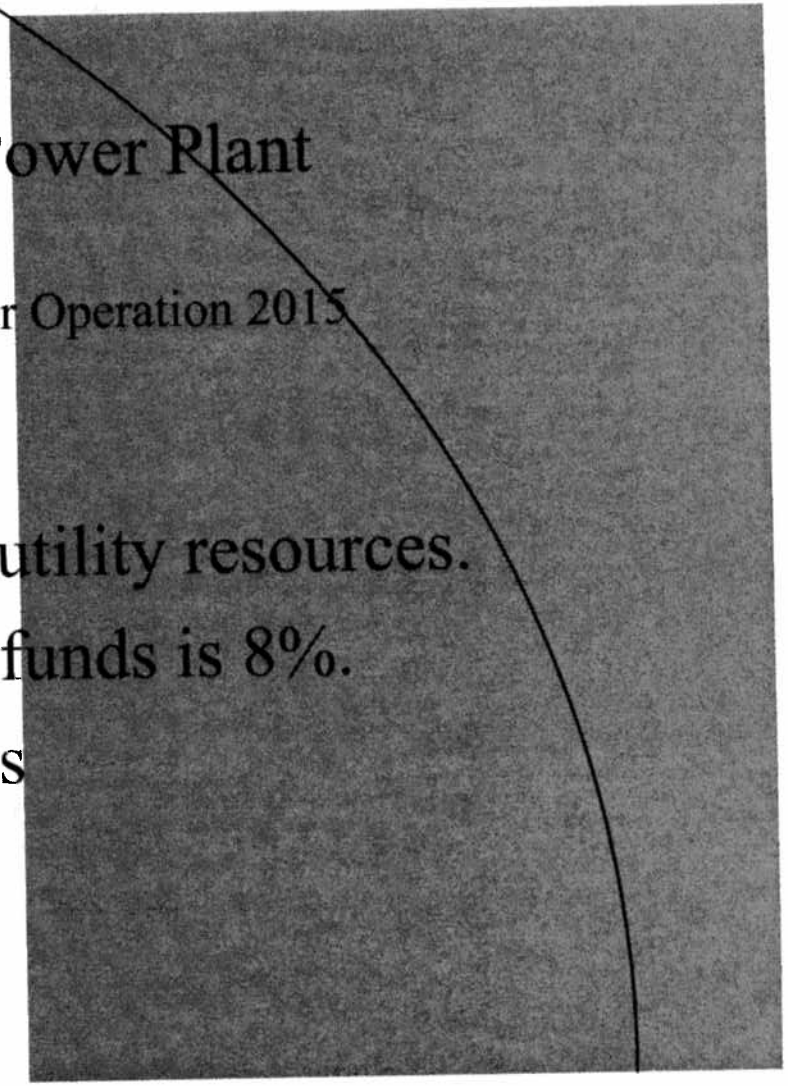
Basis of Analysis

- Both options produce the same number of kWh each year.
- Utility Rate of Return on Capital = 11.77%
- Costs based upon Consumers Energy Integrated Resource Plan
- Analysis includes all Costs:
  - Property Tax based upon state average industrial.
  - Insurance costs based upon Consumers' Rate case
  - Fuel
  - Operation & Maintenance
  - Depreciation



EOS ENERGY OPTIONS & SOLUTIONS

Coal Project Assumptions

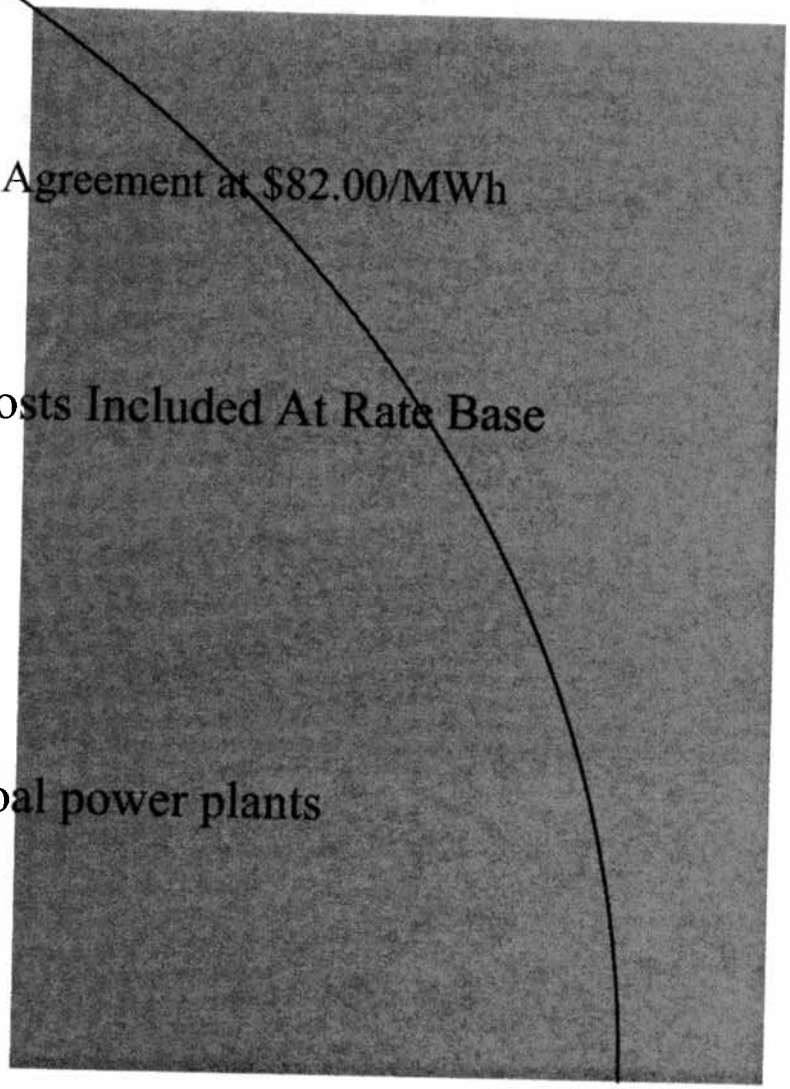


- 500 MW Supercritical Coal Power Plant
  - Heat Rate 9,200 BTU/kWh
  - 8 Year Construction Period, First year Operation 2015
  - 85% Availability
  - Annual Production – 3,723 GWh
- Backup power from existing utility resources.
- Interest rate on construction funds is 8%.
- Depreciation cycle is 40 years

EOS ENERGY OPTIONS & SOLUTIONS

Wind Project Assumptions

- 500 MW Wind Project
  - Power purchased under Power Purchase Agreement at $82.00/MWh
  - 2015 first year of operation
  - Wind production 32% of annual hours
  - Annual Production – 1,402 GWh
- 500 MW Peaker Added by Utility and Costs Included At Rate Base
  - Capital Cost of $490/MW
  - Two Year Construction Period
  - Interest on Construction Costs of 8%.
  - 2015 first year of Operation
  - 25% of power from Peaker
  - Annual Production 580 GWh
- Balance of power provided by existing coal power plants
  - Annual Coal production – 1,741 GWh



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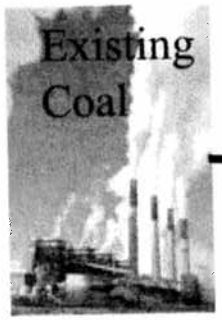

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"GRID"

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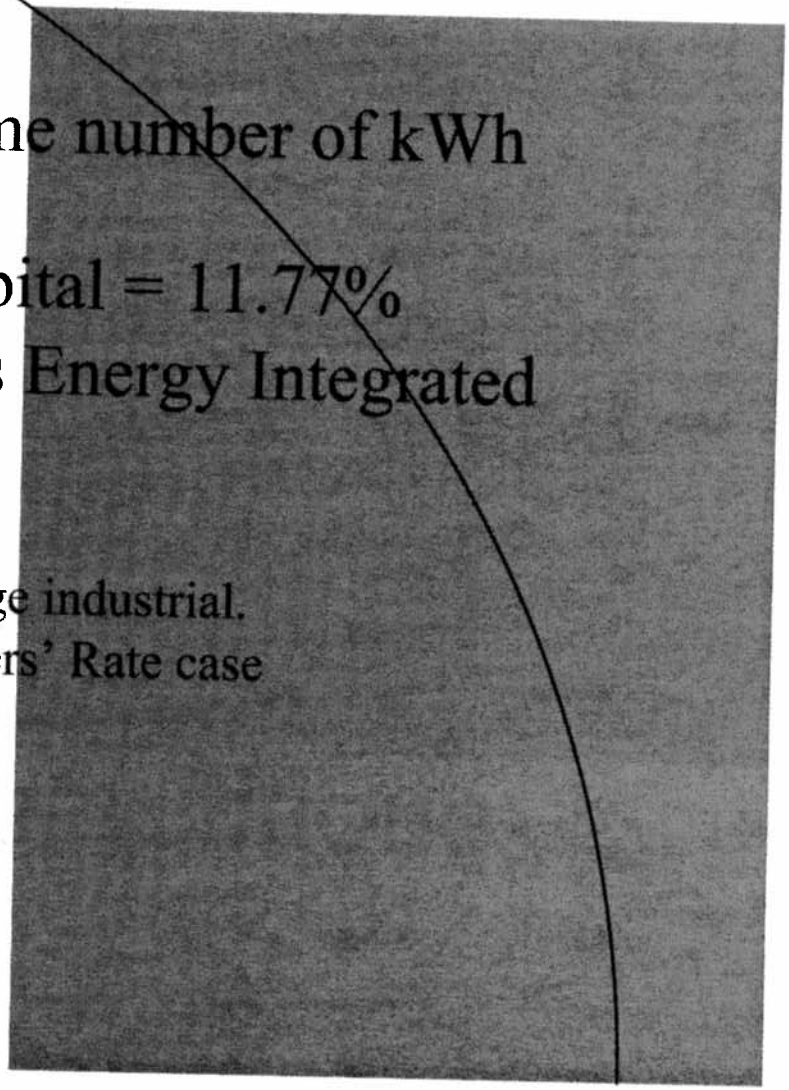

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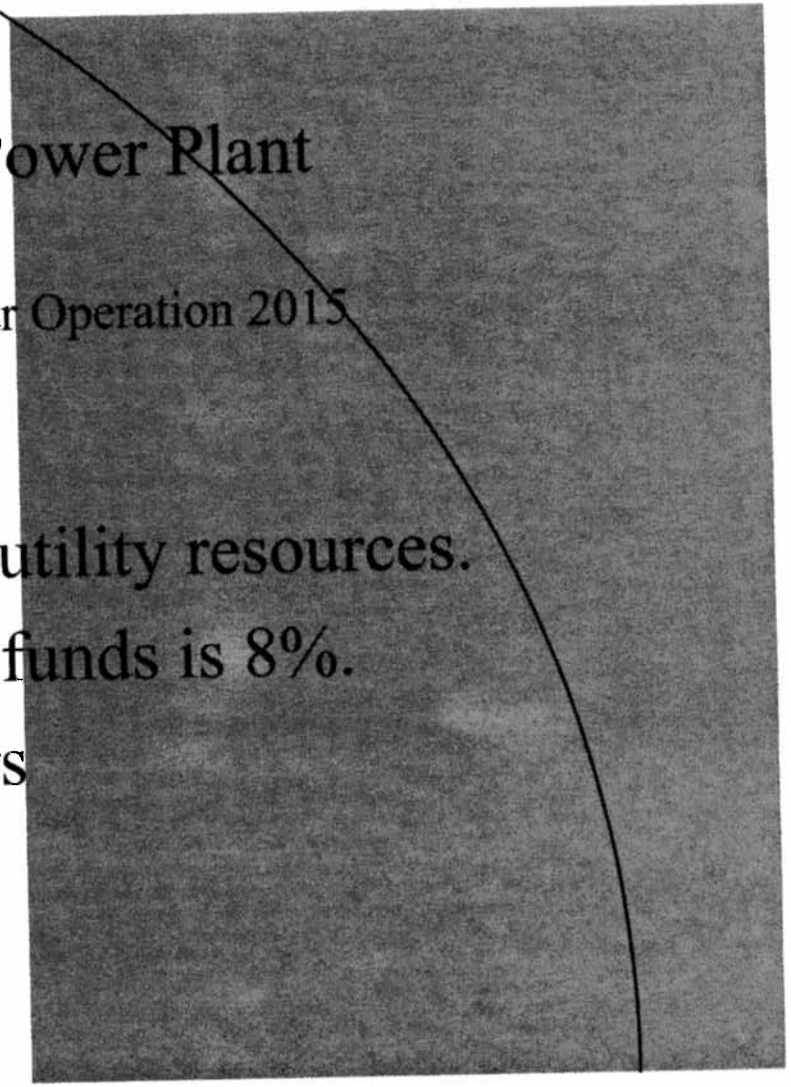

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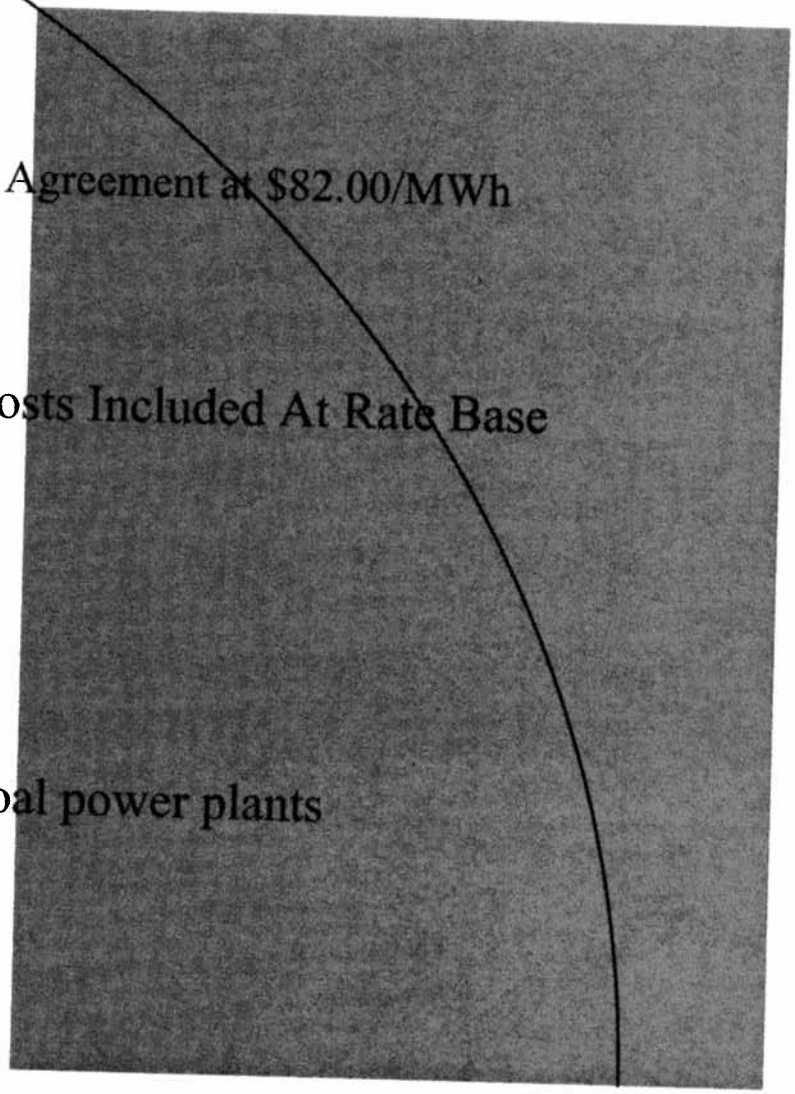

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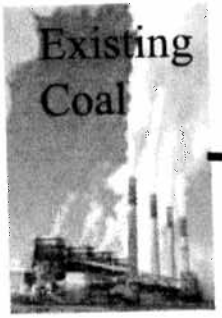

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